

COST ESTIMATE SUMMARY

Description	Total Cost ^(a)	Lower Range (-30%)	Upper Range (+50%)
ALTERNATIVE S-1: NO ACTION	\$0	\$ -	\$ -
ALTERNATIVE S-2: EXCAVATION AND OFFSITE DISPOSAL	\$ 3,540,955.06	\$ 2,478,668.54	\$ 5,311,432.59
ALTERNATIVE S-3: EXCAVATION AND ONSITE CONTAINMENT REPOSITORY	\$ 6,935,341.68	\$ 4,854,739.18	\$ 10,403,012.52
ALTERNATIVE S-4: EXCAVATION, ONSITE CONSOLIDATION, AND CAPPING	\$ 5,152,931.08	\$ 3,607,051.76	\$ 7,729,396.62
Notes:			
(a) The capital and operations and maintenance costs are rounded up to the nearest thousand			
Estimate not intended for construction			
Expected accuracy +50%/-30%			

ALTERNATIVE S-1: NO ACTION

Description	Total Cost	Data Source ^(a)
CAPITAL COST		
TOTAL - CAPITAL COST	\$0	

Notes:

(a) Sources expressed as a numerical value were obtained



ALTERNATIVE S-2: EXCAVATION AND OFFSITE DISPOSAL

Description	Total Cost	Data Source ^(a)
CAPITAL COST		
Mobilization/Demobilization	\$ 184,616.11	RACER
Clear and Grub		
To include brush and tree clearing & grubbing, cut & chip light trees, to 12 inch diameter	\$ 13,624.55	RACER
Excavation		
Excavation, including confirmation sampling and backfill	\$ 1,554,381.13	RACER
Off-site Transportation and Waste Disposal - Non-Hazardous Waste		
Transportation and disposal	\$ 1,433,627.01	RACER
Cleanup and Landscaping		
Seeding and Site restoration	\$ 119,544.53	RACER
Site Close-out Documentation		
	\$ 40,384.84	RACER
Administrative Land Use Controls		
	\$ 106,479.89	RACER
TOTAL - CAPITAL COST		
	\$3,452,658.06	
O&M COST		
Five-Year Reviews		
Includes six reviews, one review every five years for 30 years. Includes document review, site inspection and report.	\$ 88,297.00	Per Five Year \$14,716 RACER
TOTAL - O&M^(b)	\$ 88,297.00	
TOTAL - MARKED-UP COST^(c)		
	\$3,540,955.06	RACER
TOTAL - PRESENT WORTH^(d)		
	\$3,484,412.49	RACER

Notes:

(a) Sources expressed as a numerical value were obtained from the following source: RACER ®, 2017, Version 11.4.63.0. Pricing: Year 2021.

(b) Total O&M costs for 30 years with Markup and with no Discount Rate applied

(c) Total Capital and O&M costs for 30 years with Markup and with no Discount Rate applied

(d) Total Capital and O&M costs for 30 years with Markup and Discount Rate applied



ALTERNATIVE S-3: EXCAVATION AND ONSITE DISPOSAL

Description	Total Cost	Data Source ^(a)
CAPITAL COST		
Mobilization/Demobilization	\$ 184,616.11	RACER
Clear and Grub		
To include brush and tree clearing & grubbing, cut & chip light trees, to 12 inch diameter	\$ 13,624.55	RACER
Excavation		
Excavation, including confirmation sampling and backfill	\$ 1,554,381.13	RACER
Capping		
RCRA subtitle D designed containment cell	\$ 4,063,058.28	RACER
Cleanup and Landscaping		
Seeding and Site restoration	\$ 121,821.57	RACER
Groundwater Monitoring Wells		
10 wells, installed to a depth of 15ft, 2in PVC pipe	\$ 36,435.31	RACER
Site Close-out Documentation		
	\$ 40,384.84	RACER
Administrative Land Use Controls		
	\$ 106,479.89	RACER
TOTAL - CAPITAL COST	\$ 6,120,801.68	
O&M COST		
Groundwater Monitoring		
		First year \$55,876.51
10 wells, sampled annually	\$ 726,243.00	Out Years \$23,116
		RACER
Five-Year Reviews		
Includes six reviews, one review every five years for 30 years. Includes document review, site inspection and report.	\$ 88,297.00	Per Five Year \$14,716 RACER
TOTAL - O&M^(b)	\$ 814,540.00	
TOTAL - MARKED-UP COST^(c)	\$ 6,935,341.68	
TOTAL - PRESENT WORTH^(d)	\$ 6,592,303.22	

Notes:

(a) Sources expressed as a numerical value were obtained from the following source: RACER ®, 2017, Version 11.4.63.0. Pricing: Year 2021.

(b) Total O&M costs for 30 years with Markup and with no Discount Rate applied

(c) Total Capital and O&M costs for 30 years with Markup and with no Discount Rate applied

(d) Total Capital and O&M costs for 30 years with Markup and Discount Rate applied

ALTERNATIVE S-4: SOIL CONSOLIDATION AND ONSITE CAPPING

Description	Total Cost	Data Source ^(a)
CAPITAL COST		
Mobilization/Demobilization	\$ 184,616.11	RACER
Clear and Grub		
To include brush and tree clearing & grubbing, cut & chip light trees, to 12 inch diameter	\$ 13,624.55	RACER
Excavation		
Excavation, including confirmation sampling and backfill	\$ 1,554,381.13	RACER
Capping		
Capping	\$ 2,280,647.53	RACER
Cleanup and Landscaping		
Seeding and Site restoration	\$ 121,821.57	RACER
Groundwater Monitoring Wells		
10 wells, installed to a depth of 15ft, 2in PVC pipe	\$ 36,435.31	RACER
Site Close-out Documentation		
	\$ 40,384.84	RACER
Administrative Land Use Controls		
	\$ 106,479.89	RACER
TOTAL - CAPITAL COST	\$ 4,338,391.08	
O&M COST		
Groundwater Monitoring		
10 wells, sampled annually	\$ 726,243.00	First year \$55,876.51 Out Years \$23,116 RACER
Five-Year Reviews		
Includes six reviews, one review every five years for 30 years. Includes document review, site inspection and report.	\$ 88,297.00	Per Five Year \$14,716 RACER
TOTAL - O&M^(b)	\$ 814,540.00	
TOTAL - MARKED-UP COST^(c)	\$ 5,152,931.08	
TOTAL - PRESENT WORTH^(d)	\$ 4,809,892.62	

Notes:

(a) Sources expressed as a numerical value were obtained from the following source: RACER ®, 2017, Version 11.4.63.0. Pricing: Year 2021.

(b) Total O&M costs for 30 years with Markup and with no Discount Rate applied

(c) Total Capital and O&M costs for 30 years with Markup and with no Discount Rate applied

(d) Total Capital and O&M costs for 30 years with Markup and Discount Rate applied



SUMMARY OF ASSUMPTIONS

Technology
CAPITAL COST Mobilization/Demobilization 10 person crew for 120 days Clear and Grub Clear 3 Acres of Dry Material To include brush of medium density Tree clearing, cut & chip light trees, to 12 inch diameter Grubbing Depth 6 inches, bulk factor 1.2 Excavation Excavation of 34,477 cy of soil (at 2 ft depth), Sand-Silt/Sand-Clay Mix Existing Cover Soil/Gravel Replacement Cover Soil/Seed Backfill Haul Distance 10 miles Confirmation Sampling 200 sample points; Metals and SVOC Analysis Capping - Alternative 3 RCRA Non-Hazardous Waste Cap - 10.7 acres, side slope 3:1 Top Cover of 6 in of Vegetation Protection Layer 12 in offsite soil/clay Impervious Layer 40 mil HDPE Soil Layer 18 in common fill Foundation layer 12 in offsite soil/clay Drainage geotextiles, non-woven Capping - Alternative 4 Dermal cover - 10.7 acres, side slope 3:1 Top Cover of 6 in of Vegetation Foundation layer 12 in offsite soil/clay Drainage geotextiles, non-woven Cleanup and Landscaping 10.5 Acre for cleanup and landscaping Seeding and Site restoration Groundwater Monitoring Wells 10 wells, installed to a depth of 15ft, 2in Schedule 80 PVC pipe Site Close-out Documentation Includes (1) Meeting, no travel

Draft and Final Work Plans

Draft, Draft Final and Final Close-out Report and Decision Document

O&M COST**Groundwater Monitoring**

10 wells, sampled annually, 1 Field Duplicate, 1 Rinse Blank, 1 Matrix Spike/Matrix Duplicate; Metals and SVOC Analysis

Administrative Land Use Controls

Include Planning Documents and Implementation; LUC Implementation Plan of Low Complexity

(1) Planning Meeting with no travel

Five-Year Reviews

Includes six reviews, one review every five years for 30 years. Includes document review, site inspection and report.

Notes:

(a) Assumptions were inputted into: RACER ®, 2017, Version 11.4.63.0. Pricing: Year 2021.



Backup Worksheet - O&M

Costs calculated using a real discount rate of 7% - 2019 rate from the OMB circular

A-94.

Costs include 7% Markup for Contingency and Fees

Alt 1			Alt2				Alt3				Alt4			
No Action			Five Year Reviews				Monitoring and Five Year Review				Monitoring and Five Year Review			
FV	PV	Time	FV	PV	Time		FV	PV	Time		FV	PV	Time	
	\$ -	1		\$ -	1			55,877	\$ 52,221	1		55,877	\$ 52,221	1
	\$ -	2		\$ -	2			23,116	\$ 20,190	2		23,116	\$ 20,190	2
	\$ -	3		\$ -	3			23,116	\$ 18,870	3		23,116	\$ 18,870	3
	\$ -	4		\$ -	4			23,116	\$ 17,635	4		23,116	\$ 17,635	4
	\$ -	5	\$ 14,716	\$ 10,492	5			37,832	\$ 26,974	5		37,832	\$ 26,974	5
	\$ -	6		\$ -	6			23,116	\$ 15,403	6		23,116	\$ 15,403	6
	\$ -	7		\$ -	7			23,116	\$ 14,395	7		23,116	\$ 14,395	7
	\$ -	8		\$ -	8			23,116	\$ 13,454	8		23,116	\$ 13,454	8
	\$ -	9		\$ -	9			23,116	\$ 12,574	9		23,116	\$ 12,574	9
	\$ -	10	\$ 14,716	\$ 7,481	10			37,832	\$ 19,232	10		37,832	\$ 19,232	10
	\$ -	11		\$ -	11			23,116	\$ 15,833	11		23,116	\$ 15,833	11
	\$ -	12		\$ -	12			23,116	\$ 15,298	12		23,116	\$ 15,298	12
	\$ -	13		\$ -	13			23,116	\$ 14,780	13		23,116	\$ 14,780	13
	\$ -	14		\$ -	14			23,116	\$ 14,281	14		23,116	\$ 14,281	14
	\$ -	15	\$ 14,716	\$ 5,334	15			37,832	\$ 22,582	15		37,832	\$ 22,582	15
	\$ -	16		\$ -	16			23,116	\$ 13,331	16		23,116	\$ 13,331	16
	\$ -	17		\$ -	17			23,116	\$ 12,880	17		23,116	\$ 12,880	17
	\$ -	18		\$ -	18			23,116	\$ 12,445	18		23,116	\$ 12,445	18
	\$ -	19		\$ -	19			23,116	\$ 12,024	19		23,116	\$ 12,024	19
	\$ -	20	\$ 14,716	\$ 3,803	20			37,832	\$ 19,013	20		37,832	\$ 19,013	20
	\$ -	21		\$ -	21			23,116	\$ 11,224	21		23,116	\$ 11,224	21
	\$ -	22		\$ -	22			23,116	\$ 10,845	22		23,116	\$ 10,845	22
	\$ -	23		\$ -	23			23,116	\$ 10,478	23		23,116	\$ 10,478	23
	\$ -	24		\$ -	24			23,116	\$ 10,124	24		23,116	\$ 10,124	24
	\$ -	25	\$ 14,716	\$ 2,711	25			37,832	\$ 16,008	25		37,832	\$ 16,008	25
	\$ -	26		\$ -	26			23,116	\$ 9,451	26		23,116	\$ 9,451	26
	\$ -	27		\$ -	27			23,116	\$ 9,131	27		23,116	\$ 9,131	27
	\$ -	28		\$ -	28			23,116	\$ 8,822	28		23,116	\$ 8,822	28
	\$ -	29		\$ -	29			23,116	\$ 8,524	29		23,116	\$ 8,524	29
	\$ -	30	\$ 14,716	\$ 1,933	30			37,832	\$ 13,479	30		37,832	\$ 13,479	30
	\$ -			\$ 31,754				\$ 471,502				\$ 471,502		